Journal of Semitic Studies LXVI/1 Spring 2021 doi: 10.1093/jss/fgaa045

TO BELABOUR THE POINTS: ENCODING VOWEL PHONOLOGY IN SYRIAC AND HEBREW VOCALIZATION

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Abstract

Medieval Hebrew and Syriac scribes both indicated vowels by placing dots above or below their consonantal writing. These vowel points were created in the Late Antique and early Islamic periods to disambiguate the vocalization of important texts, especially the Bible. The earliest step in this process was the implementation of the Syriac 'diacritic dot' system, which used a single dot to distinguish pairs of homographs: a dot 'above' marked a word with relatively-backed vowels, and a dot 'below' marked its homograph with relatively-fronted vowels. This graphic depiction conveyed a phonological association of 'height' with 'backness', and that association then entered the Masoretic Hebrew tradition in the form of *mille'el* ('above') and *millera'* ('below') homograph comparisons. In turn, this principle of backness as 'height' informed the later placement of both the Syriac and the Tiberian Hebrew vowel points.[1]

Introduction

Scholars have debated the relationship between the Tiberian vocalization system and the Syriac linguistic tradition for well over a century.[2]

[1] This work was supported by the Bill & Melinda Gates Foundation [OPP1144]. I would like to thank Geoffrey Khan and Magdalen Connolly for their comments on an early draft of this paper, as well as the attendees of the 2019 meeting of the International Organization for Masoretic Studies (IOMS) in Aberdeen for their helpful questions and feedback.

[2] For example, see: H. Graetz, 'Die Anfänge der Vocalzeichen im Hebräischen (pt. I)', *Monatsschrift für Geschichte und Wissenschaft des Judentums* 30:8 (1881), 348–67; P. Haupt, 'The Names of the Hebrew Vowels', *Journal of the American Oriental Society* 22 (1901), 13; F.R. Blake, 'The Development of Symbols for the Vowels in the Alphabets Derived from the Phoenician', *Journal of the American Oriental Society* 60: 3 (1940), 391; A. Dotan, 'The Beginnings of Masoretic Vowel Notation', in H. Orlinsky (ed.), *1972 and 1973 Proceedings IOMS* (Masoretic

On the most basic level, the Tiberian and Syriac vowel points appear similar, with both sets composed of dots, placed above or below consonants, to indicate the vowel qualities that follow them. However, close examination of the two point systems reveals few, if any, phonetic correlations between their respective signs. Because of this inconsistency, the passing similarities between the two systems' graphemes have largely been dismissed as superficial coincidences.[3] Ultimately, dots look like other dots, regardless of the language around them, and there is little evidence to suggest that one language borrowed its vowel signs directly from the other. Despite this, comparative analyses of the earliest Syriac and Masoretic sources reveal that there is a substantial amount of crossover in the phonological principles of the Syriac and Tiberian vocalization systems, including in the principles that determined the placement of the vowel points themselves.

There are two main connections between the Hebrew and Syriac vocalization systems. First, in the early eighth century, before the introduction of 'absolute' vowel signs that each represented a single vowel, both Syriac and Hebrew writers applied various 'relative' methods to describe their vocalization. Syriac scribes first recorded the 'relative' qualities of vowels with individual dots, placed above or below a word, that distinguished homographs that had identical consonants. A dot 'above' indicated a homographic word with relatively open and back vowels (e.g. /ɔ/, /o/), while a dot below indicated its twin with relatively closed and fronted vowels (e.g. /e/, /u/). Over time, the ideas of 'above' and 'below' dissociated from the physical locations of the vowel dots and became linked to the phonetic qualities of the vowels that they most often indicated. These ideas resulted in linguistic terms derived from the locations of the dots: *men l'al* (above) and *men ltaḥt* (below). These terms then entered the Hebrew tradition as *mille'el* (above) and *millera'* (below) vowel comparisons. The Masoretes used this idea of relative 'height' to place the Hebrew vowels on a 'scale', deeming back vowels to be 'higher', while front vowels were relatively 'low.' Second, this association of backness with height directly informed the placement of the vowel points in both Syriac and Tiberian Hebrew.

Studies 1, Missoula 1974), 21–34; A. Dotan, 'Masorah', in *Encyclopedia Judaica* (Detroit 2007), 613.

[3] See, however, Dotan, 'Masorah', 631 for a tenuous connection between Syriac and Babylonian Hebrew points.

Relative Vowel Phonology in Syriac

Some of the earliest extant sources for Syriac vowel phonology are the works of Jacob of Edessa (d. 708 CE), a Syrian bishop who wrote the first true Syriac grammar a century or more before the first Hebrew Masoretic treatises.[4] Three of his texts in particular deal with vocalization, and taken together, they show that Jacob's attitude towards vowel pointing seems to have changed over time.[5] The first is his 'Letter on Orthography' to George of Sarug, in which Jacob bemoans the incompetence of scribes who, to his mind, misuse the Syriac orthographic and diacritic systems. Second, likely around the same time as the letter, Jacob wrote a tractate called 'On Persons and Tenses'.[6] This text is essentially a pamphlet, again written with scribes in mind, with instructions on where to place the diacritic dots and accents. Third, after these other two texts, Jacob wrote his Syriac grammar, the *Turrɔṣ Mamllɔ Nahrɔyɔ* (*The Correction of Mesopotamian Speech*). It represents the most advanced stage of his ideas about grammar and phonetics, including a novel vocalization system, but today survives only in fragments.[7]

By the time Jacob wrote his 'Letter on Orthography', Syriac scribes had already been using diacritic dots to record the details of their language for generations. Between the fifth and seventh centuries, they developed a diacritic system that included the *riš-dɔlat* dot, *seyɔme* (plural dots), some accent marks, and a diacritic dot that distinguished between homographic pairs.[8] Of particular interest for

[4] A. Salvesen, 'Jacob of Edessa's Life and Work: A Biographical Sketch', in B. ter Haar Romeny (ed.), *Jacob of Edessa and the Syriac Culture of His Day* (Leiden 2008), 1–10. See also, D. Kruisheer, 'A Bibliographical Clavis to the Works of Jacob of Edessa', in B. ter Haar Romeny (ed.), *Jacob of Edessa and the Syriac Culture of His Day* (Leiden 2008), 265–94, pp. 281–2.

[5] For further details on these works, see M. Farina, 'La linguistique syriaque selon Jacques d'Édesse', in M. Farina (ed.), *Les auteurs syriaques et leur langue* (Études syriaques 15, Paris 2018), 167–87. See also, J.P. Martin, 'Jacques d'Édesse et les voyelles syriennes', *Journal Asiatique* 6:13 (1869), 447–82.

[6] G. Phillips (ed.), *A Letter by Mār Jacob, Bishop of Edessa, on Syriac Orthography: Also a Tract by the Same Author, and a Discourse by Gregory Bar Hebræus on Syriac Accents*. (London 1869).

[7] W. Wright (ed.), *Fragments of the Syriac Grammar of Jacob of Edessa* (London 1871).

[8] G. Kiraz, *Tūrrāṣ Mamllā: A Grammar of the Syriac Language*, I (Piscataway, NJ 2012), 12, 20–1, 62–4, 70; J.B. Segal, *The Diacritical Point and the Accents in Syriac* (London 1953), 3–6. See also, G. Kiraz, *The Syriac Dot: A Short History* (Piscataway, NJ 2015). Kiraz and Segal both cite BM Add. 12150, which is dated to 411, as evidence of the homograph dot at the beginning of the fifth century

vocalization is this homograph dot, which was placed on a word based on the relative quality of its vowels in comparison to a homograph.[9] It allowed the reader to infer the full vocalization of a pair of homographs, provided that they were familiar with Syriac, and was thus an indirect form of vowel notation. By the seventh century, scribes even began using multiple diacritic dots to mark more than one vowel in a single word, though still based on relative comparisons with homographs.[10] This form of the system was current during Jacob of Edessa's lifetime, but it was inherently imprecise, and the potential for mistaken use of the dots prompted him to write a letter complaining about the quality of seventh-century scribal work.

Jacob spends the bulk of his 'Letter on Orthography' detailing all of the ways in which scribes are misspelling and misrepresenting the texts that they endeavour to copy,[11] and lays out a prescriptive ruleset for how they ought to work in the future.[12] One of his main concerns is the rampant misunderstanding of the proper placement of the diacritic dots, as he states, 'With respect to the position of the points also, every man takes authority to himself to place them as he pleases'.[13] In saying this, Jacob knows that the pointing system can only indicate vowels and distinguish homographs on a relative basis, so if a scribe or reader has an incomplete mastery of Syriac, then they may inadvertently corrupt the words. Nevertheless, he cannot bring himself to wholly dispense with the deficient diacritic dots,[14] and he makes a final argument in defence of the system:

(Segal, *The Diacritical Point*, 12; Kiraz, *The Syriac Dot*, 34–7). However, Jones has argued that some of the dots in this manuscript are later additions; see F.S. Jones, 'Early Syriac Pointing in and behind British Museum Additional Manuscript 12150', in R. Lavenant (ed.), *Symposium Syriacum VII* (Orientalia Christiana Analecta 256, Rome 1998), 429–44.

[9] Kiraz, *The Syriac Dot*, 41–6.

[10] Kiraz, *Tūrrāṣ Mamllā*, I:20, 64; Segal, *The Diacritical Point*, 9.

[11] Presumably this included texts that Jacob himself had written, which could only have increased his frustration. For descriptions of the extant manuscripts of Jacob's works, see Farina, 'La linguistique syriaque'.

[12] Ibid., 171–3.

[13] Phillips, *A Letter by Mār Jacob*, 8.

[14] Even when Jacob eventually invented vowel letters for his *Turrɔṣ Mamllɔ Nahrɣɔ*, he stated that they were only meant for teaching grammatical forms, and not for wider use in Syriac writing (Wright, *Fragments of the Syriac Grammar*, ܐ). It seems that Syriac scribes had no qualms with following Jacob's instructions this time, as the vowel letters are practically unattested outside of his grammar. See also, Kiraz, *Tūrrāṣ Mamllā*, I:73–5.

> Because I am not a *child*, but rather I believe myself to be a *parent* of inventions, by the fact that nature has brought to me all things which are proper—those which teach me and strengthen me—so that I know against which letter, and above or below, I should make the placements of dots. These things will be sufficient, at the moment, for the knowledge of the scribes, the lovers of God, those who are right-minded, acquiescing, and accepting of correction.[15]

Jacob's insistence that he is a 'parent', not a 'child', is a pun on the words *yɔlodɔ* (parent; dot above) and *yalludɔ* (child; dot below). The two differ by only one dot, determined by the relative quality of their vowels,[16] so the implication is that correct pointing is vital to correct meaning. Since Jacob is a bishop and an accomplished linguist, he has no problem interpreting homographs like these, even with just the simple, relative vocalization system, and so he claims that 'nature' (*kinɔ*) has given him the knowledge to understand the dots. This knowledge is probably the centuries-long tradition of scribal pointing that preceded him, and he deems it 'sufficient, at the moment (*nespqɔn dša'tɔ*)', for the scribes. This last phrase stands out, as it would be unnecessary to include it unless Jacob was imagining a time when the current system might be insufficient, but that time had not yet arrived.

Unfortunately for Jacob, his letter did not prevent those unscrupulous scribes from misrepresenting his ideas through poor diacritical rigour. It is not difficult to imagine him, distraught by the letter's failure, torn between preserving the Syriac pointing tradition or admitting that the system needed a serious overhaul. In this light, the

[15] Phillips, *A Letter by Mār Jacob*, ت-ك.

[16] Jacob of Edessa most likely maintained a phonetic inventory with at least six (/o/, /u/, /ɔ/, /a/, /e/, /i/) or possibly seven (also /ɛ/) distinct vowel phonemes, in contrast to the five vowels of later West Syriac (/o/, /u/, /a/, /e/, /i/). The analysis in this paper is based on a six-vowel inventory, but the proposed phonological principles that connect those six vowels to the positions of the diacritic dots can also apply to the seven- and five-vowel inventories without modification. See discussion below, as well as E.E. Knudsen, *Classical Syriac Phonology* (Perspectives on Linguistics and Ancient Languages 7, Piscataway, NJ 2015), 91–9; A.M. Butts, *Language Change in the Wake of Empire: Syriac in Its Greco-Roman Context* (Winona Lake, IN 2016), 89.

tractate 'On Persons and Tenses' seems like a valiant last attempt to set straight the relationship between dots, vowels and grammatical forms from within the existing pointing tradition. He explains the phonological aspects of this relationship in the introduction of the tractate:[17]

> Then the tenses are three, past, present, and future, and sounds are thick and thin. Every saying, that is, [every] form, when it is thick or wide with sound, then it takes a point above. But when it is narrow or thin, then below. If it is intermediate, between narrow and thick, and there are two other [words] written the same as it, then it takes two points, one above and one below.[18]

Every word has a particular vowel or set of vowels that is qualitatively different from its homographs. This difference is determined by comparison, so for any given pair of words with identical consonants, Jacob would say that one is more 'thick' (*ʿbe*) or 'wide' (*pte*), while the other is more 'thin'[19] (*nqed*) or 'narrow' (*qaṭṭin*). *Nqed* and *ʿbe* are probably calques of Greek phonetic terms that describe voicing in consonants,[20] but Jacob has adapted them to correlate 'thick' with phonetic backing and 'thin' with phonetic fronting as features of vowel quality.[21] Similarly, 'wide' and 'narrow' correspond to a conception of vowel 'openness'.[22] Jacob also includes an 'intermediate' (*meṣʿyɔ*) category, marked by a dot above and below, which only exists insofar as some words have multiple homographs. From a phonological standpoint, this third group is largely redundant, as any word that is 'intermediate' could be called 'wide' or 'narrow' in

[17] Farina, 'La linguistique syriaque', 182–5.

[18] Phillips, *A Letter by Mār Jacob*, ܢ.

ܟܬܒ ܕܒܬܪ ܩܠܝܠ ܘܥܒܝ ܘܡܦܫܩ ܘܡܚܘܪ ܐܝܟ ܕܐܢ ܐܝܬ ܒܗ ܡܠܬܐ ܬܠܬ ܙܒܢ̈ܝ ܐܝܬ ܒܗ ܥܒܝ ܘܩܠ ܘܦ̈ܬܝ ܘܩܛ̈ܝ ܘܡ̈ܬܪ̈ܝ ܘܡ̈ܬܪ̈ܝ ܐܝܟ ܕܐܢ ܐܝܬ ܒܗ ܡܠܬܐ ܕܒܝܢ ܩܠ ܘܦ̈ܬܝ ܘܩܛ̈ܝ ܘܡ̈ܬܪ̈ܝ ܐܝܟ ܕܐܢ ܐܝܬ ܒܗ ܡܠܬܐ ܕܒܝܢ ܩܠ ܘܩܛ

another context, and it may be another instance of Jacob adapting a Greek linguistic concept to fit the Syriac language.[23]

Applying these principles to the above example, *yɔlodɔ* takes a dot above and *yalludɔ* takes a dot below due to the difference in the quality of their vowels: /ɔ/ is 'thicker' than /a/ because it is articulated farther back in the mouth, and /o/ is similarly backed in comparison to /u/. However, according to Jacob, words with a homograph dot above also included 'wide' sounds. This association suggests that he may have also considered /ɔ/ to be 'wider' (i.e. more open) than /a/, just as /o/ is 'wider' than /u/. However, /ɔ/ requires some lip rounding—that is, presumably, some 'narrowing'—while /a/ does not, a discrepancy which raises questions about which vowels Jacob was actually indicating. If, in 700, he already only differentiated the five vowels known from received West Syriac (/o/, /u/, /a/, /e/, /i/),[24] then we would expect his homograph dots to distinguish *yoludo* (parent) from *yaludo* (child). For someone reading with this pronunciation system, the diacritic dot above *yoludo* would still indicate that its initial vowel (/o/) is articulated farther back in the mouth that that of *yaludo* (/a/).

However, this later inventory does not explain how the first vowel of *yɔlodɔ* could be considered 'wider' than that of *yalludɔ*. Moreover, based on an analysis of the seven vowel letters that appear in Jacob's *Turrṣ Mamllɔ Nahrɣɔ*, Ebbe Knudsen suggests that the fully-rounded West Syriac reflex of earlier Aramaic **ā* (i.e. /o/) was not yet part of Jacob's vowel inventory, and he still would have pronounced it as /ɔ/.[25] Jacob likely also maintained the distinction between /o/ and /u/ that is lost in received West Syriac,[26] and as such, he would have said *yɔlodɔ* (not *yoludo*) for 'parent'. It seems likely then that he truly considered /ɔ/ as somehow phonetically 'wider' than /a/. It may be that he simply judged the total volume of the oral cavity to be 'wider' when articulating /ɔ/ than /a/, without considering the amount of lip rounding in each vowel at all.[27] Alternatively, George Kiraz suggests that in the vowel inventory of the first scribes who used the homograph dot (*c.* fifth century), the reflex of **ā* could have been realised

[23] R. Talmon, 'Jacob of Edessa the Grammarian', in B. ter Haar Romeny (ed.), *Jacob of Edessa and the Syriac Culture of His Day* (Leiden 2008), 159–76, p. 167.

[24] Knudsen, *Classical Syriac Phonology*, 92.

[25] Ibid., 91–5, 115. Knudsen renders this vowel as /å/.

[26] Ibid., 96–8.

[27] This description directly contrasts the use of *pɔtaḥ* ('opening') and *qɔmeṣ* ('closing') in the early Masoretic tradition, where they described relative amounts of lip movement (see below).

as an unrounded /ɑ/.[28] If that is the case, then the first supralinear homograph dot may well have been placed to indicate a vowel that was both relatively-backed ('thick') *and* relatively-open ('wide'). If so, then Jacob may be transmitting an earlier tradition, rather than directly describing his own pronunciation, when he says that a word with /ɔ/ is 'thick or wide'. However, while this last explanation is a good fit for Jacob's terminology, it is probably not correct, as the /ɔ/ reflex developed in Syriac before the first homograph dots, at least as early as the fourth century.[29]

In any case, regardless of which reflex of **ā* initially determined the placement of the dots, or which vowel Jacob personally pronounced in the first syllable of *yɔlodɔ* (i.e. /ɑ/, /ɔ/, or /o/), the diacritic dot above always corresponded to the member of a homograph pair with relatively-backed vocalization. This association of the 'dot above' with backness became the critical factor for analysing Syriac homograph pairs.

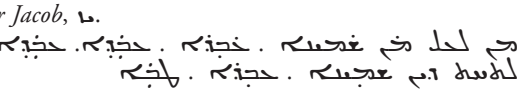
In the fourth section of 'On Persons and Tenses', Jacob demonstrates how he believes the system of vowel qualities and diacritic dots should work. He gives several examples, writing: 'Above are, for example, *šmayyɔnɔ* (heavenly), *ʿɔbdɔ* (doing), *ʿbɔdɔ* (labour), *ʿabbɔdɔ* (fit?),[30] *malkɔ* (king), and *ṭɔbɔ* (good). Then below are *šaminɔ* (heaven), *ʿabdɔ* (servant), and *ṭebɔ* (report)'.[31] These comparisons are all based on the relative amount of backness associated with the vowels in each word. Words that are 'thick' most often contain the vowels /o/ or /ɔ/, in comparison to homographs which have /u/, /a/ and /e/. Notably, /a/ is 'thinner' (more fronted) than /ɔ/, but 'thicker' (more backed) than /e/, so most words that would be 'intermediate' in a three-way homograph contain /a/. Moreover, due to the tendency in Syriac orthography to write all or nearly all O- and U-vowels with a *mater lectionis* letter *waw*, /o/ and /u/ are usually only compared to each other, rather than to the rest of the vowels. Since /o/ is more back and more open than /u/, words with /o/ took a dot above, while their homographs with /u/ took a dot below. Thus, the vowels in

[28] Kiraz, *The Syriac Dot*, 45.

[29] Butts, *Language Change*, 89–90.

[30] According to the introduction, at least one of these words should be 'intermediate', but Jacob says they are all 'above.' The third word from the *ʿbd* root should possibly be omitted. I suspect some of the dots in this section are not faithfully copied from Jacob's original.

[31] Phillips, *A Letter by Mār Jacob*, ٤.



a word with a 'dot above' in the Syriac system are consistently more back than the vowels in a homograph with a 'dot below.'

This rudimentary vocalization system is entirely relative, with every dot representing a range of possible vowel qualities depending on its context within a Syriac text. It remained the only way for Syriac scribes to indicate vowel qualities beyond the use of *matres lectionis* letters, at least until the end of the seventh century. At that point, Jacob of Edessa invented a system of vowel letters for teaching grammatical forms in his *Turrṣ Mamllɔ Nahrɔyɔ*, indicating each quality in the Syriac vowel inventory with a unique sign. However, these letters did not catch on, and instead the eighth century saw the development of a more complex system of absolute vowel points, which relied on the phonetic principles of the relative diacritic dots in order to match each vowel to an individual grapheme. This same process occurred among the Hebrew Masoretes, and it is to their tradition that we now turn.

Relative Vowel Phonology in Hebrew

The first Masoretes recorded their oral tradition related to the proper transmission of the Bible during the early Islamic period, continuing their activities up to the mid-tenth century. In order to guard against potential errors in the scribal transmission of the Bible, they produced numerous notes and lists containing details about unusual words and grammar.[32] Most of this work was done in Jewish Babylonian and Palestinian Aramaic, which remained spoken vernaculars until at least the ninth century.[33] Like their Syriac contemporaries, these early Masoretes did not have absolute vowel-pointing systems. In fact, the earliest extant descriptions of Hebrew vowel phonology show that the Masoretes also relied on relative terminology.

There is substantial evidence that the earliest Masoretes described Hebrew vowels in terms of their relative amount of openness in comparison to other vowels. Richard Steiner has argued that these first relative vowel descriptors were based on the roots *pṭḥ* (opening) and

[32] B.J. Roberts, 'The Old Testament: Manuscripts, Texts and Versions', in G.W.H. Lampe (ed.), *The Cambridge History of the Bible* (Cambridge 1969), 1–26, pp. 6–7. For examples of these types of masoretic notes, see Z. Frendsdorff, *Das Buch Ochlah w'Ochlah* (Hannover 1864).

[33] G. Khan, *The Early Karaite Tradition of Hebrew Grammatical Thought: Including a Critical Edition, Translation and Analysis of the Diqduq of 'Abū Ya'qūb Yūsuf ibn Nūḥ on the Hagiographa* (Leiden 2000), 21.

qmṣ (closing), likely as Aramaic active participles like *pɔtaḥ* and *qɔmeṣ*.[34] In their original form, these terms did not refer to the specific vowels /a/ and /ɔ/, respectively, as they would in later times, but rather indicated vowel qualities in homographs according to relative amounts of lip movement. That is, /a/ (*pɔtaḥ*) was relatively open in comparison to a homographic /ɔ/ (*qɔmeṣ*), which was pronounced with rounded lips. Accordingly, the only 'modern' vowel names that appear in the Tiberian *Masorah magna* and *parva* are *pɔtaḥ* and *qɔmeṣ*, and there they refer not only to the pair of /a/ and /ɔ/, but also to the relatively open /ɛ/ (*pɔtaḥ*) in contrast to the relatively closed /e/ (*qɔmeṣ*).[35]

A number of other Masoretic notes reflect similar relative descriptions, and Steiner points out two homograph lists in Ginsburg's *Massorah* that have the headings: 'one fills, one closes (*ḥad mɔle' wə-ḥad qɔmeṣ*)'; and 'pairs, one fills the mouth, one closes the mouth (*zawgin ḥad mɔle' pum wə-ḥad qɔmeṣ pum*)'.[36] In those lists, the *ml'* (filling) root refers to /o/, while the *qmṣ* (closing) root refers to /u/. While 'filling' is not precisely the same as 'opening', the contrast remains clear, and perhaps corresponds to something like Jacob of Edessa's idea of 'thick' or 'wide' vowels. In any case, the writers of these lists observed the relative openness or volume of the mouth when pronouncing /o/ as 'fuller' than /u/. Aron Dotan also identified two similar lists, these with the headings 'one closes and one opens' (*ḥad qɔmeṣ wə-ḥad pɔtaḥ*), that compare all seven vowels. They even include one instance of /ɔ/ classified as *pɔtaḥ* in comparison to /u/ as *qɔmeṣ*,[37] showing that the Masoretes' relative vowel phonology went beyond just /a/-/ɔ/ and /ɛ/-/e/ homographic pairs.

The remnants of this early relative system appear in the later Masoretic tradition, even into the tenth century, with additional phonetic

[34] R.C. Steiner, 'Pa̱ṯaḥ and Qåmeṣ: On the Etymology and Evolution of the Names of the Hebrew Vowels', *Orientalia, NOVA Series* 74:4 (2005): 372–81, pp. 374, 377–80; Khan, *The Early Karaite Tradition of Hebrew Grammatical Thought*, 24.

[35] I. Yeivin, *Introduction to the Tiberian Masorah*, trans. E.J. Revell (1983), 113–14.

[36] Steiner, 'Pa̱ṯaḥ and Qåmeṣ', 379, n. 52. Bacher first noticed these headings in 1895. See W. Bacher, *Die Anfänge der hebräischen Grammatik (1895) together with Die hebräische Sprachwissenschaft vom 10. bis zum 16. Jahrhundert* (1892), ed. L. Blau, (Studies in the History of Language Sciences 4, Amsterdam 1974), 16, n. 6. See also, vol. III of C. Ginsburg, *The Massorah* (Jerusalem 1880), sections 529a and 529b.

[37] Steiner, 'Pa̱ṯaḥ and Qåmeṣ', 379; Dotan, 'The Beginnings of Masoretic Vowel Notation'. See vol. II of Ginsburg, *The Massorah*, 310–11, section 606.

modifications. Most prominently, in *Diqduqe ha-Ṭeʿamim* (*The Fine Points of the Accents*), Aaron ben Asher (d. c. 960) refers to /a/ and /ɔ/ with terms derived from *pṯḥ* and *qmṣ*, but describes other vowels according to the number of dots in their graphemes.[38] This usage further suggests that *pṯḥ* and *qmṣ* as phonetic descriptors predate the other vowels' names, and probably predate the introduction of the Tiberian vocalization signs themselves. Moreover, Ben Asher modifies the phonetic qualities implied by these terms with the word *qṣṭon* (small), using *qɔmeṣ qṣṭon* to indicate /e/[39] while *pɔtaḥ qṣṭon* indicates /ɛ/.[40] In this instance, the /e/ and /ɛ/ form a similar contrastive pair to /ɔ/ and /a/, with one being relatively closed, and the other relatively open. However, the introduction of *qṣṭon* adds a second layer to the old relative system. The E-vowels, /e/ and /ɛ/, are both more closed than the two A-vowels, /ɔ/ and /a/, and so they are relatively *qṣṭon*. These terms saw widespread use in masoretic treatises, and they match the language of Jacob of Edessa, who described Syriac homographs with /e/ as *qaṭṭin* (narrow, small) in comparison to those with /ɔ/ and /a/.

Both Steiner and Dotan conclude that these vowel terms based on opening and closing the mouth emerged as relative descriptors in the eighth century, prior to the introduction of absolute vowel pointing in Hebrew.[41] Then, after the invention of the vocalization points, the vowels themselves eventually gained individual names.[42] The Tiberian Masoretes' local dialect of Jewish Palestinian Aramaic (JPA) did not distinguish between /a/ and /ɔ/, so those were the vowels for which new readers would have most often needed reminding when reciting Hebrew.[43] As such, it is likely that the early relative terms *pɔtaḥ* and *qɔmeṣ* fossilized as the names for /a/ and /ɔ/ during the shift

[38] A. Dotan (ed.), *Sefer Diqduqe ha-Teʿamim le-R. Aharon ben Moshe ben Asher* (Jerusalem 1967), 115, line 3–5; 119, 2–3; 138, 2; 140, 2–3; 141, 1; 144–5, 2–3.

[39] Ibid., 137, line 2.

[40] This usage of *qṣṭon* also occurs in the *Masorah magna* and *parva*, as well as a number of other Masoretic treatises. See I. Yeivin, *Introduction to the Tiberian Masorah*, 80, 113.

[41] Steiner, 'Pa̱ṯaḥ and Qåmeṣ', 379; Dotan, 'The Beginnings', 32.

[42] This development occurred gradually, with many Masoretes and grammarians still referring to the vowels with the number of their dots (e.g. *ṣere* was 'the two dots;' *segol* 'the three dots;' etc.) in the tenth and eleventh centuries. See Khan, *The Early Karaite Tradition*, 24; Dotan, 'Masorah', 633; Steiner, 'Pa̱ṯaḥ and Qåmeṣ', 377–8.

[43] Steiner, 'Pa̱ṯaḥ and Qåmeṣ', 380; S. Fassberg, *A Grammar of the Palestinian Targum Fragments from the Cairo Genizah*, Harvard Semitic Studies (Atlanta 1990), 28–31, 53.

to absolute vowel pointing, as teachers and new readers most frequently applied them to those two vowels. Similarly, in JPA, there was no distinction between /e/ and /ɛ/.[44] These vowels were less common in the biblical recitation than /ɔ/ and /a/, but new readers likely still struggled to separate them, and so they became known as the 'small' (*qəṭon*) *qɔmeṣ* and *pɔtaḥ*.

While these earliest words described the relative openness of vowels, the Masoretes had another pair of terms for comparing vowel qualities in homographs: *milleʿel* (above) and *millera*ʿ (below). These two words occur in masoretic word lists to distinguish pairs of homographs according to stress position,[45] often with the heading 'one is below and one is above' (*ḥad millera*ʿ *wə-ḥad milleʿel*).[46] For example, *mɛlɛk* (king) has penultimate stress, so the Tiberians called it *milleʿel*. By contrast, its final-stress homograph, *mɔlak* (he ruled), was *millera*ʿ. Heinrich Graetz undertook one of the first studies of these homograph lists,[47] and he found that some lists in *Oklah wə-Oklah* used the terms *milleʿel* and *millera*ʿ to classify homograph pairs based on a difference in vowel quality, rather than stress.[48] In these cases, a homograph with a more backed vowel was deemed *milleʿel* in comparison to its twin with a more fronted vowel, which was *millera*ʿ. For example, *qərɔʾuni* (קָרָאֻנִי, 'they came upon me', Jer. 13:22) is *milleʿel*, while *qərɔʾani* (קָרָאַנִי, 'it came upon me', Job 4:14) is *millera*ʿ,[49] because /u/ is articulated farther back in the mouth than /a/.

Both Steiner and Dotan take this usage as evidence of the early relative vocalization system,[50] but Graetz originally went further, and hypothesized that the terms 'above' (*milleʿel*) and 'below' (*millera*ʿ) once referred to the positions of diacritic dots that, like in Syriac, indicated the relative quality of vowels. He further argued that the terms *milleʿel* and *millera*ʿ themselves had Syriac origins. Later scholars have largely discounted Graetz's theory, as none of his proposed diacritic dots have ever been attested in the context of *milleʿel* and

[44] S. Fassberg, *A Grammar of the Palestinian Targum Fragments from the Cairo Genizah*, 53.

[45] Yeivin, *Introduction to the Tiberian Masorah*, 102.

[46] Graetz, 'Die Anfänge der Vocalzeichen (I)', 348; Dotan, 'The Beginning'. See vol. II of Ginsburg, *The Massorah*, 310–11, section 606.

[47] Graetz, 'Die Anfänge der Vocalzeichen (I)'; Graetz, 'Die Anfänge der Vocalzeichen (II)', 395–405.

[48] Dotan, 'Masorah', 622–3. See Yeivin, *Introduction to the Tiberian Masorah*, 103.

[49] Dotan, 'The Beginnings', 24.

[50] Steiner, 'Pa̱ṯaḥ and Qâmeṣ', 379; Dotan, 'The Beginnings', 32.

millera‘ vowel lists,[51] and as Dotan insists: ‘The terms, however, do not exist, and as far as we know never did exist, in Syriac’.[52]

Terms Which Did Exist in Syriac

As discussed above, in his grammatical tractate ‘On Persons and Tenses’, Jacob of Edessa writes: ‘Every saying, that is, [every] form, when it is thick or wide with sound, then it takes a point above. But when it is narrow or thin, then below.’[53] He clearly means that a word with ‘thick’ or ‘wide’ vocalization (i.e. backed and open vowels) takes a dot *men l‘al* (above), while its comparatively ‘thin’ or ‘narrow’ (i.e. fronted and closed) homograph takes a dot *men ltaḥt* (below). However, as is common in Syriac, the second half of this statement does not repeat the word *nuqzɔ* (point, dot), such that in a vacuum it would be read, ‘then what is narrow or thin is below’. Jacob duplicates this syntax when he writes: ‘Above are, for example, *šmayyɔnɔ* (heavenly), *‘ɔbdɔ* (doing), *‘ɔbdɔ* (labour), *‘abbɔdɔ* (fit?), *malkɔ* (king) and *ṭɔbɔ* (good). Then below are *šaminɔ* (heaven), *‘abdɔ* (servant) and *ṭebɔ* (report).’[54] Once again, Jacob almost certainly means to describe the locations of the diacritical dots on these words, but here he does not use the word *nuqzɔ* at all. Instead, the prepositional phrases *men l‘al* and *men ltaḥt* themselves appear to be phonological terms, functioning as attributes that describe some phonetic quality of the words in their respective categories.

The relatively uncommon construction of these phrases further hints at their role as technical terms. Normally in Syriac, one would expect the phrases *l‘al men(h)* and *ltaḥt men(h)* to mean ‘above’ and ‘below’, at least in the context of diacritic dots. Indeed, Thomas the Deacon, an earlier seventh-century Syriac linguist, describes the

[51] Dotan, ‘Masorah’, 622–3; S. Morag, ‘Some Aspects of the Methodology and Terminology of the Early Massoretes’, *Leshonenu* 38:1/2 (1973), abstract. A few dots do indicate stress, but never vowel quality.

[52] Dotan, ‘The Beginnings’, 28. He reiterates this point in his 2007 encyclopaedia article.

[53] Phillips, *A Letter by Mār Jacob,* ܓ. See footnote above for Syriac text. Dotan actually cites this passage during his evaluation of Graetz, but he argues that the Syriac system ‘could not be sufficiently defined’ and does not draw a connection to the usage of *mille‘el* and *millera‘*. See Dotan, ‘The Beginnings’, 25, 28.

[54] Phillips, *A Letter by Mār Jacob,* ܒ. See footnote above for Syriac text.

locations of accent dots using those two phrases,[55] and the later grammarians Ḥunayn ibn Isḥāq (d. 873)[56] and Elias of Ṣoba (d. 1049)[57] use them for the locations of their vowel dots. Even Jacob himself writes *lʿal men(h)* and *ltaḥt men(h)* for the positions of diacritical dots in his 'Letter on Orthography'.[58] It seems then that *men lʿal* and *men ltaḥt* were reserved specifically for describing dots that were related to vowel phonology, such as those in homograph pairs. Consequently, during Jacob's lifetime, the phrases *men lʿal* and *men ltaḥt* were taking on some role as technical terms, *independent* of the dots they once described. This role was connected to categories of vowel qualities, which in turn became associated with the concepts of 'above' and 'below'. This process was not quite complete during Jacob's career, but it likely would not have been strange for him and his contemporaries to say that a word like *ʿɔbdɔ* was *men lʿal*, while *ʿabdɔ* was *men ltaḥt*, with the intention of explaining the phonology of those words.

Jacob of Edessa thus puts words with the most-backed Syriac vowels into a *men lʿal* category, and classifies their homographs with more fronted vowels as *men ltaḥt*. As already mentioned, some early Masoretes used *milleʿel* (above) and *millera‘* (below) to compare homographs in the same way, with more backed vowels being 'above' in comparison to 'below' fronted vowels. Despite Dotan's insistence that there are no Syriac terms that could be the source of *milleʿel* and *millera‘*, the Syriac phrases *men lʿal* and *men ltaḥt* are not so far removed from the Masoretic terms.

It seems that the origin of *milleʿel* and *millera‘* lies in this conceptualized usage of *men lʿal* and *men ltaḥt* among Syriac grammarians to compare the phonetic qualities of vowels. These phrases were not originally phonological descriptors, but rather they gained that function over time as a result of the frequent association of a dot 'above' with relatively back vowels (/o/, /ɔ/, /a/) and a dot 'below' with relatively front vowels (/u/, /e/, /i/). By the early eighth century, Syriac linguists could use these terms to describe the actual vowels within a word, rather than just the locations of dots, and so *men lʿal* and *men ltaḥt* became conceptually dissociated from their original diacritic

[55] J.P. Martin, *Jacobi Episcopi Edesseni Epistola ad Georgium Episcopum Sarugensem de orthographia syriaca. Eiusdem Jacobi nec non Thomae Diaconi Tractatus de punctis aliaque documenta in eamdem materiam* (Paris 1869), ܒ, line 19, 23, 24.

[56] G. Hoffmann (ed.), *Opusculo Nestoriana* (Paris 1880), 6, line 18–19.

[57] F. Baethgen (ed.), *Syrische Grammatik des Elias of Tîrhân* (Leipzig 1880), ܠ, line 7, 10, 12, 14.

[58] Phillips, *A Letter by Mār Jacob*, ܐ, line 13–14. Also ܒ, line 2–3. Outside the context of diacritic dots, see ܐ, line 16: the art of writing 'is *lʿal men* all arts'.

marks. As such, the lack of attested diacritical dots in the Masoretic *mille'el* and *millera'* homograph lists is not at all unexpected, since by the time the Masoretes could have adopted Syriac concepts of 'above' and 'below' vowels, the Syriac terms had already developed phonological meanings independent of any dots. This association of height with backness became foundational to both the Syriac and Hebrew traditions as they developed their absolute vowel-pointing systems in the eighth and ninth centuries.

The Development of Absolute Vowel Pointing

Given the lack of precision inherent in relative vocalization methods, Syriac scribes gradually refined and expanded their diacritic dot system between the sixth and eighth centuries. Sometime in the late sixth or early seventh century, they added a grapheme with two dots, one above and one below a word, to indicate an 'intermediate' form between two other homographs.[59] That is, when three words had identical consonants, the one with the 'thickest' or 'widest' vowel (usually /ɔ/) took a dot above; the one with the 'thinnest' vowel (usually /e/) took a dot below; and the one with the 'intermediate' vowel (usually /a/) took two dots, one above and one below. This relative practice for distinguishing three-way homographs was still in use during the second half of the seventh century, and Jacob of Edessa makes explicit reference to it in 'On Persons and Tenses'.[60] At roughly the same time, some scribes began using another two-dot sign, this one with a pair of horizontal sublinear dots, to mark that a homograph was specifically not 'thick' or 'intermediate', but definitely 'thin'. It most commonly indicated /e/ in contrast to /a/ and /ɔ/, but could also mark that a *yod* was /i/, as opposed to /e/, or that a *waw* was /u/, as opposed to /o/.[61] The seventh century also saw Syriac scribes marking multiple relative vowels within a single word, using diacritic dots to compare individual letters between homographs, rather than entire words. As a result, while the new two-dot signs originated as extensions of the relative diacritic system, they became increasingly associated with the vowels that they most often indicated.[62]

[59] Kiraz, *Tūrrāṣ Mamllā*, I:12–13, 64.

[60] Phillips, *A Letter by Mār Jacob*, ܒ.

[61] Segal, *The Diacritical Point*, 27–8. Kiraz, *Tūrrāṣ Mamllā*, I:70. Curiously, Jacob of Edessa does not mention this sign.

[62] Kiraz, *Tūrrāṣ Mamllā*, I:12–13, 70–1.

This evolution of the diacritic system culminated in a fully-fledged, absolute vowel pointing system by the end of the eighth century, with discrete graphemes for every vowel quality.[63] The locations of the points all reflect the phonetic principles that determined the placement of the original diacritic dots, and coincide with the conceptual attributions of *men lʿal* (above) and *men ltaḥt* (below). The 'intermediate' sign, with a dot above and a dot below, became the exclusive grapheme for /a/ (ܰ), the vowel that it most often indicated in the three-way homograph system. Similarly, the two sublinear dots became the sign for /e/ (ܶ or ܶ),[64] while a single dot below—usually with a *mater lectionis* letter *yod*—represented /i/ (ܺ). Meanwhile, a new sign—this time with two supralinear dots—was introduced for /ɔ/ (ܲ), the vowel that was most often 'above' in the relative system. Finally, in Syriac orthography, the vowels /o/ and /u/ are nearly always written with the *mater lectionis* letter *waw*, so words that have one of those two vowels can only be homographic with each other. As a result, Syriac scribes only needed to distinguish /o/ and /u/ in the context of a *waw*, so they placed a single dot above *waw* for the relatively open, backed /o/ (ܳ), and a single dot below for the comparatively closed, fronted /u/ (ܽ).

This vocalization system, which saw use among both East and West Syrians until the tenth century,[65] follows the correlation of 'height' with phonetic backness. Among vowels that do not typically take a *mater lectionis*, the most-backed vowel, /ɔ/, takes two supralinear dots, reflecting maximum 'above-ness'. The one supralinear and one sublinear dot for /a/ indicates its 'middle' status, while two sublinear dots show the relative 'below-ness' of /e/. Then for vowels which do take a *mater lectionis*, *yod* plus the single sublinear dot of the old relative system marks /i/, the most fronted of all Syriac vowels. Likewise, a dot above *waw* indicates that /o/ is the more backed

[63] Ibid., I:71; Segal, *The Diacritical Point*, 28–9.

[64] There is some variation in manuscripts with the orientation of these dots and their combination with the letter *yod*, possibly representing variations in the length of /e/; Segal, *The Diacritical Point*, 30–1. Nöldeke notes that the horizontal pair sometimes replaces the oblique pair 'for no reason that can be discovered'; T. Nöldeke, *Compendious Syriac Grammar*, trans. J.A. Crichton (London 1904), 8. However, Knudsen argues that the variation is not arbitrary, and generally follows rules related to syllable structure; Knudsen, *Classical Syriac Phonology*, 111–14. The only feature that matters for the present analysis is that these dots are consistently sublinear.

[65] Kiraz, *Tūrrāṣ Mamllā*, I:16, 60–1, 79–80; J.F. Coakley, 'When Were the Five Greek Vowel-Signs Introduced into Syriac Writing?', *JSS* 56:2 (September 2011): 307–25.

of the two vowels that *waw* can represent, while /u/ with a dot below is relatively fronted. The positions of these vocalization dots thus encode the phonetic properties of their vowels.

In contrast to the Syriac dots, there is no record of any intermediate stages in the development of the Tiberian vocalization system. However, the Tiberian points systematically encode the same phonetic information as the Syriac, building on the comparisons of backness from the *mille'el* (above) and *millera'* (below) homograph lists. By breaking down these lists, the following 'scale' emerges, with each successive vowel becoming progressively less *mille'el* (i.e. backed) and more *millera'* (i.e. fronted): /o/, /u/, /ɔ/, /a/, /ɛ/, /e/, /i/.[66] This is the same scale that Saadia Gaon (d. 942) defines in his Hebrew grammar, *Kutub al-Lugha* (*The Books of Language*),[67] which suggests that these principles of comparative backness remained central to Hebrew vowel phonology even into the tenth century.[68] By using this scale and an analogy with the contemporaneous Syriac vowel system, the logic of the Tiberian points becomes clear.

First, while Graetz's hypothesized diacritical dots 'above' and 'below' have never materialized in Hebrew homograph lists, the Tiberian vocalization system does have signs that fill similar roles. A single dot above a letter indicates /o/ (אֹ), the most-*mille'el* vowel on the Hebrew scale, and by maximal contrast, a single dot below denotes /i/ (אִ), the most-*millera'* vowel. However, even from these starting points, the Tiberian Masoretes faced a problem: they already had a set of supralinear disjunctive accent signs, and they risked confusing those signs with vowel points. As such, they favoured sublinear signs for their new vocalization system, breaking with the established Palestinian and Babylonian traditions of mainly supralinear vowel points.[69]

In contrast to Syriac scribes, the Tiberians' next challenge was to find a way to indicate movement along a vertically-oriented vowel scale *without* using supralinear graphemes. They did so by starting with the single-dot sign for /i/, the 'lowest' vowel, and then added an

[66] In modern terms, *ḥolem*, *šuruq*, *qāmāṣ*, *pataḥ*, *segol*, *ṣērē* and *ḥiriq*, though these names are later developments.

[67] S.L. Skoss, 'A Study of Hebrew Vowels from Saadia Gaon's Grammatical Work "Kutub al-Lughah"', *The Jewish Quarterly Review* 42:3 (January 1952): 283–317, p. 283.

[68] Dotan, 'The Beginnings', 28–30.

[69] A. Dotan, 'The Relative Chronology of Hebrew Vocalization and Accentuation', *Proceedings of the American Academy for Jewish Research*, 48 (1981), 87–99, pp. 93–4.

additional dot for each 'step' up the scale. One step up from /i/ was /e/, so it received two dots (אֱ), and one step up from there was /ɛ/, which took three dots (אֲ). However, a four-dot mark was likely too cumbersome, and could be misinterpreted as a combination of other graphemes, so for /a/ the Tiberians needed another sign. Luckily for them, other Palestinian vocalization systems already had a sign for /a/—a supralinear horizontal stroke (אַ)[70]—which may even have seen use in Tiberias itself to help distinguish /ɔ/ and /a/. Preferring sublinear signs, the Tiberian Masoretes moved this stroke below the line, and used it for /a/ (אַ). They then added a single dot to this stroke, representing the single step from /a/ up to /ɔ/ (אָ).[71]

Next up the scale was /u/, but like in Syriac, this vowel was usually represented in the biblical text by a *mater lectionis waw*. As such, the Masoretes often only needed to distinguish it from /o/, the other vowel that *waw* could represent. A single intralinear dot, nestled into the *waw*, was sufficient to indicate that /u/ was more *millera'* (i.e. more fronted) than /o/, but more-*mille'el* (more backed) than the rest of the vowels. This vowel also has a second sign—three sublinear dots at angle (אָ)—that does not fit so neatly into the scale. It is the least common sign in the Tiberian vocalization system, and its shape has no parallel in the Babylonian or Palestinian systems, but any explanation for it is little more than speculation. Counting five steps up from /i/, one might expect that /u/ would take six dots, and perhaps the oblique angle of the sign indicates that those six have been halved to three. Alternatively, and perhaps precisely because it is uncommon to have a U-vowel without a *mater lectionis waw*, the Masoretes may have included this sign as a sort of afterthought once the other signs had been set. It is also worth noting that descriptions of the vowel scale—for example, the one in *Kutub al-Lugha*—remove /u/ from its place next to /o/, and say that it is articulated outside the mouth, at the lips.[72] In that sense, perhaps the three oblique dots are meant to

[70] See Dotan, 'Masorah', 625; Fassberg, *A Grammar of the Palestinian Targum Fragments*, 31–2.

[71] Although many modern fonts do not render it, the original *qɔmeṣ* sign (אָ) was a horizontal stroke with a separate dot, rather than two connected segments.

[72] Skoss, 'A Study of Hebrew Vowels', 300, line 23 to 302, line 5; S. Baer and H.L. Strack, *Dikduke ha-Ṭe'amim des Ahron ben Moscheh ben Ascher, und andere alte grammatisch-massorethisch Lehrstücke* (Leipzig 1879), 34, line 12–35; I. Eldar (ed.), 'Kitāb naḥw al-'ibrānī: A Treatise on the Changes of Vocalization', *Leshonenu* 2 (1981), 105–32, p. 118, line 13–15 (in Hebrew). This placement of /u/ at the lips may be the result of influence from the Arabic grammatical tradition, which held that /u/ shares its articulation point with the bilabial consonant /w/. See Sībawayh,

convey an ultimate 'low' position, outside the mouth and below the bottom of the scale.

It seems most likely that the Tiberian Masoretes invented this pointing system all at once,[73] specifically tailoring it to record their unique reading tradition. Each dot represents a deliberate choice in this design, codifying the older system of *milleʿel* and *millera*ʿ comparisons in a way that is internally consistent, while also leaving space for accent and cantillation signs. The product of this invention mirrors the final Syriac dots that also encoded phonetic backness with height-based principles, but which had developed gradually over several centuries.

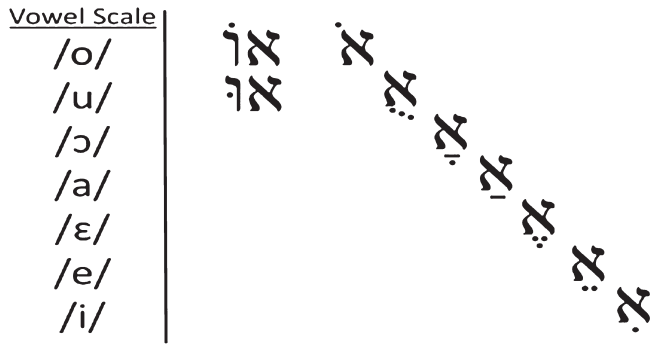


Figure 1. Visualization of the Tiberian vocalization system, with each vowel as a step on the *milleʿel-millera*ʿ scale.

Kitāb Sībawayh, ed. Harun, IV (Cairo 1988), 101; Ibn Jinnī, *Sirr ṣināʿa al-iʿrāb*, ed. H. al-Hindawi, (Damascus 1993), 8.

[73] The one 'vocalization' sign not included here is the *šewa*, which consists of two vertical dots below a letter, but it is unlikely that the Tiberians envisioned this sign using the same principles as the seven vowels. *Šewa* is distinct from the other signs in that it sometimes represents silence, rather than vocalization, and masoretic treatises generally do not classify it as one of the *məlakim* (vowels; lit. 'kings'). That said, it may have its origin in the Syriac tradition. Segal notes that some seventh-century Syriac manuscripts use two sublinear *horizontal* dots to represent a 'vocal' or 'mobile' *šewa* (/ə/), though this may just be an extension of the relative diacritic dots used for /e/ (see Segal, *The Diacritical Point*, 27). The Masoretic *šewa* also shares a name with *šwayyɔ* (levelling), one of the four main Syriac pausal accents, which also consisted of two dots (Segal, *The Diacritical Point*, 75–6). See A. Dotan, 'The Names of Šewa at the Beginning of Hebrew Grammar', *Leshonenu* (1954), 11–30.

Conclusion: Points of Contact

The history of the Syriac vocalization system shows a clear development from a sixth-century diacritical method for distinguishing two-way homographic pairs to a fully-fledged set of absolute vowel points by the beginning of the ninth century. This absolute system grew naturally out of the phonetic principles of the earlier relative system as particular vowel qualities became associated with the 'above' (*men l'al*) and 'below' (*men ltaḥt*) positions of certain dots. Early Masoretic homograph lists use similar 'above' (*mille'el*) and 'below' (*millera'*) terminology, following the same principle of 'height' as phonetic backness, and it is likely that they adapted both this principle and these terms from the Syriac linguistic tradition. However, when the Tiberian Masoretes needed an absolute vowel pointing system for their reading tradition, they could not rely on an evolving history of diacritic dots, since such dots did not exist in Hebrew. Instead, they applied the phonetic principles of their homograph lists—the same principles that they shared with Syriac grammarians—and invented a complete, cohesive system of vocalization signs that encoded their vowel phonology. If this reconstruction is correct, then a new question arises: how could this intellectual exchange have occurred between Hebrew and Syriac linguists? The commonalities between the two traditions imply that there was contact between Jewish Masoretes and Syriac Christian grammarians, but no extant eighth- or ninth-century sources describe these exchanges. Nevertheless, early Islamic Tiberias may have been an ideal location for such interactions to occur.

Tiberias was the religious and intellectual centre for Jews in Palestine for the entirety of the period at hand, roughly the seventh through tenth centuries.[74] Specifically, it was the site of the Sanhedrin and its successor, the Palestinian Yeshiva (academy),[75] which consistently attracted wealth and donations from the broader Jewish community in the Middle East.[76] Muslim forces captured Tiberias in 14/635,[77] but the archaeological record shows a distinct lack of

[74] As opposed to Jerusalem, which was mostly inhabited by Christians at this time. See M. Gil, *A History of Palestine, 634–1099* (Cambridge 1997), 83, 171, 589.
[75] Ibid., 175, 545–7.
[76] Ibid., 495.
[77] Ibid., 43.

destruction layers from this time,[78] and the city then became the capital of the caliphal province of al-Urdun.[79] This status enhanced its role as an economic and cultural hub, and it flourished in the following centuries.[80] Quite likely, the relative wealth of Tiberias facilitated the scholastic activities of the Masoretes, and any relationship between them and the Yeshiva could only have boosted the prestige and authority of the Tiberian reading tradition. In fact, at least one prominent Masorete, known as Pinḥas Roš ha-Yešivah, became head of the academy in the early ninth century,[81] and it is safe to assume that he would have made sure the local Masoretic scholars were well-supported.

Additionally, Tiberias had a substantial Christian population that lived in the city from pre-Islamic times until at least the seventh century.[82] As early as the sixth century, there was a monastery on Mount Berenice,[83] just outside of Tiberias, which would have served the local Christian community as a centre for scribal and scholastic activity. This community also seems to have been quite wealthy, financing substantial building projects during the eighth century,[84] and presumably they supported local monks and scribes as well. Tiberias was thus the foremost site for Jewish intellectual activity in seventh- and eighth-century Palestine, and was also home to a wealthy Christian community that included scribes. That said, there is no evidence that members of this community were specifically Syriac Christians, nor is there any indication that our main subject of comparison—Jacob of Edessa—ever visited Tiberias.[85]

[78] G. Avni, *The Byzantine-Islamic Transition in Palestine: An Archaeological Approach* (Oxford 2014), 72, 75. Fred Donner takes the absence of seventh-century destruction layers at many Christian and Jewish sites in the Levant as evidence of relative social continuity during the transition from Byzantine to Muslim rule. See F. Donner, *Muhammad and the Believers: At the Origins of Islam* (Cambridge, MA 2010), 106–10.

[79] Gil, *A History of Palestine*, 174; Avni, *The Byzantine-Islamic Transition*, 71.

[80] Avni, *The Byzantine-Islamic Transition*, 72, 75.

[81] Dotan, 'The Relative Chronology', 5.

[82] Gil, *A History of Palestine*, 169; Avni, *The Byzantine-Islamic Transition*, 78, 88–9.

[83] Avni, *The Byzantine-Islamic Transition*, 72. There was a bishop and a functioning monastery in Tiberias at least as late as 810; see Gil, *A History of Palestine*, 175.

[84] Avni, *The Byzantine-Islamic Transition*, 79–80, 86.

[85] Jacob spent most of his life in northwestern Syria, and lived in the convents of Qennešrin, Eusebona and Tell 'Adda (all near Aleppo). Salvesen, 'Jacob of Edessa's Life and Work', 1–3.

Nevertheless, Jacob would have had opportunities to interact with Jews during his career. Before becoming the bishop of Edessa, Jacob studied in Alexandria,[86] and he reports observing Jews there praying towards Jerusalem.[87] He also writes that it is permissible for Syriac Christians to teach Muslim and Jewish children,[88] which suggests that such teaching arrangements occurred in Syriac communities during the waning decades of the seventh century. Jacob even had a unique admiration of Hebrew among Syriac scholars of his time, and he demonstrates clear understanding of certain Jewish practices in his theological writings.[89] However, it seems that most of his knowledge of Hebrew came from Greek sources, and he makes no mention of personally communicating with Jews.[90]

Besides Jacob's own activities, there is evidence of broad intellectual contact between Jews and Syriac Christians in the late antique and early Islamic periods. Adam Becker describes the cultural situation of pre-Islamic Babylonian Jews and East Syriac Christians, saying: 'Jews and Christians in Mesopotamia spoke essentially the same language, were subjects of the same state, and shared a common imaginary world, which included notions of magic, mysticism, eschatology, revelation and the need for inquiry into the meaning of that revelation.'[91] He suggests that this cultural setting promoted the comparable development of the Rabbinic Academies and East Syriac schools as parallel intellectual institutions, with similar pedagogical structures and attitudes toward 'scholastic' activity.[92] He also argues that this cultural setting persisted into the early centuries of Islam,

[86] Ibid., 1.

[87] R. Hoyland, 'Jacob and Early Islamic Edessa', in B. ter Haar Romeny (ed.), *Jacob of Edessa and the Syriac Culture of His Day* (Leiden 2008), 11–24, pp. 20–1.

[88] Ibid., 17.

[89] A.M. Butts and S. Gross, 'Introduction', in A.M. Butts and S. Gross (eds), *Jews and Syriac Christians: Intersections across the First Millennium* (Tübingen 2020), 1–24, pp. 17–18; A. Salvesen, 'Did Jacob of Edessa Know Hebrew?', in A. Rapoport-Albert and G. Greenberg (eds), *Biblical Hebrew, Biblical Texts: Essays in Memory of Michael P. Weitzman* (Journal for the Study of the Old Testament Supplement Series 333, London 2001), 457–69, pp. 458–9.

[90] Salvesen, 'Did Jacob of Edessa Know Hebrew?', 460–7; Butts and Gross, 'Introduction', 17.

[91] A.H. Becker, 'The Comparative Study of "Scholasticism" in Late Antique Mesopotamia: Rabbis and East Syrians', *AJS Review* 34: 1 (April 2010), 91–113, pp. 98–9.

[92] Ibid., 103–8. See also, A.H. Becker, *Fear of God and the Beginning of Wisdom: The School of Nisibis and the Development of Scholastic Culture in Late Antique Mesopotamia* (Pennsylvania 2006).

when Christians and Jews (and Muslims) jointly evolved an intellectual culture of rational discourse based on shared Aristotelian logic. This process culminated in the eighth and ninth centuries with the Arabic translation movement and the establishment of the field of *kalām*, in which Jews, Christians and Muslims alike participated.[93] Becker thus concludes that for Jews and Christians of the early Islamic period, 'we must remain aware of the continuing possibility of their participation in common realms, whether it be in the rationality of *kalām*, the ancient vernacular of magic, the shared scripture of the Hebrew Bible, or eventually the shared Arabic language.'[94]

Texts also appear from this period that reveal direct contacts between Jews and Syriac Christians. Jacob of Edessa's acknowledgement that Christians teachers could take on Jewish or Muslim students is already one such example, but Aaron Butts and Simcha Gross also point out Timothy I (d. 832), an Eastern Catholicos who described the discovery of a cache of Hebrew manuscripts near Jericho that required the expertise of Jews from Jerusalem to be read.[95] Similarly, they note that Saadia Gaon (d. 942) engages with Christian polemical arguments that can be traced back to Jacob of Edessa,[96] and that an eleventh-century Iraqi Gaon reports instructing his student to consult the local Catholicos on how to interpret a biblical verse.[97]

None of these examples indicate that the Tiberian Masoretes had direct contact with Syriac scribes or grammarians, but they do show that such interactions would not have been inconceivable in the eighth-century Middle East. As the Arabic language gained a foothold in the region, Syriac Christian and Jewish communities both needed to take steps to preserve their biblical recitation traditions in the face of a changing linguistic landscape. It is possible that some of these steps were taken in tandem, or at least closely in parallel, with

[93] A.H. Becker, 'Beyond the Spatial and Temporal *Limes*: Questioning the "Parting of the Ways" outside the Roman Empire', in A.H. Becker and A. Yoshiko Reed (eds), *The Ways That Never Parted* (Tübingen 2003), 373–92, pp. 387–91.

[94] Ibid., 391.

[95] Butts and Gross, 'Introduction', 18–19.

[96] Ibid., 19, 22–3; Y. Moss, 'Versions and Perversions of Genesis: Jacob of Edessa, Saadia Gaon and the Falsification of Biblical History', in A.M. Butts and S. Gross (eds), *Jews and Syriac Christians: Intersections across the First Millennium* (Tübingen 2020), 175–98.

[97] Butts and Gross, 'Introduction', 19; Y.M. Dubovick, '"Oil, Which Shall Not Quit My Head": Jewish-Christian Interaction in Eleventh-Century Baghdad', *Entangled Religions: Interdisciplinary Journal for the Study of Religious Contact and Transfer*, 6 (2018), 95–123.

Aramaic-speaking Christians and Jews talking together and discussing their respective solutions to the problem of vocalization. Perhaps all it would have taken was a single conversation—a chance encounter on the road from Tiberias to Aleppo—for a Syriac scribe to introduce the idea of *men lʿal* and *men ltaḥt* comparisons to a Masorete. This shared phonological principle then grew into the *milleʿel* and *millera*ʿ vowel lists of the early Masorah, and not long after, it directly informed the final arrangement of the Syriac vowel points and the invention of the Tiberian vocalization system.

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